



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,217	12/09/2005	Jeffrey H. Yanof	2003P01925WOUS	4972

38107 7590 10/18/2011  
PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
P. O. Box 3001  
BRIARCLIFF MANOR, NY 10510

EXAMINER
----------

EVOY, NICHOLAS LANE

ART UNIT	PAPER NUMBER
----------	--------------

3768

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

10/18/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

vera.kublanov@philips.com  
debbie.henn@philips.com  
marianne.fox@philips.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/560,217	<b>Applicant(s)</b> YANOF ET AL.	
	<b>Examiner</b> NICHOLAS EVOY	<b>Art Unit</b> 3768	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 17 September 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### **35 USC § 112 6<sup>th</sup> Paragraph**

1. Claims 10-18 are presumed to invoke 35 USC 112 6th Paragraph because the claims meet the following three-prong analysis:
  - a. The claim limitations must use the phrase “means for” or “step for”;
  - b. The “means for” or “step for” must be modified by functional language; and
  - c. The phrase “means for” or “step for” must not be modified by sufficient structure, material or acts for achieving the specified function (See MPEP 2181).
2. In this case, the Examiner has interpreted the “means for” function of Claims 10-18 (line 7) to relate to: “means for selecting a virtual trajectory defining a path for inserting the medical device into said patient” as referenced on Pages 9-12 (i.e. virtual planning) of applicant’s specification.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1-8, 10-17 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Kwoh et al, US Patent Number 5,078,140 in view of McIntyre, IV, US patent Number 6,468,226 B1.

Art Unit: 3768

5. In re claims 1, 10 and 19, Kwoh discloses a system, method or apparatus for inserting a medical device into a patient including an imaging device scanning the patient to generate a volumetric image data set of the patient, a human readable device for displaying an image of the patient derived from the volumetric image data set, means for selecting a virtual trajectory defining a path for inserting the medical device into the patient, robotic means on the imaging device and movable into selected positions relative to the imaging device, and a guide apparatus disposed on the robotic means to direct movement of the medical device relative to the patient disposed on the robotic means, the guide apparatus comprising: a connector portion coupling the guide apparatus with the imaging device at a distal end of the robotic means (from column 2, line 62 to column 3, line 9); a main body portion supported relative to the imaging device by the connector portion (see Figs. 1, 4 and 5); a gripping area formed at a first end of the main body portion, the gripping area adapting the guide apparatus for manual gripping by an associated operator (i.e. when the disclosed robotic system is in a mode for manual surgical operation; see column 6, line 57 to column 7, line 2); and, a holding area formed at a second end of the main body portion, the holding area holding the medical device in an orientation suitable for motion relative to the patient along a selected linear path, the guide apparatus being operative to translate the medical device along the selected linear path in response to manual force applied by the associated operator at the gripping area (see from column 5, line 17 to column 10, line 4).
6. Kwoh does not disclose that the medical device is comprises a linear slider mechanism which restricts movement of the guide apparatus such that it is translated

Art Unit: 3768

along a linear path in response to manual force applied by the associated human operator at said gripping area during insertion of the medical device. McIntire teaches a remote tissue biopsy apparatus that inserts and slides a biopsy needle along a linear trajectory in response to a manual force applied by a human operator at a knob (Column 8, Lines 53-65, Column 10, Lines 23-40 and Figures 1 and 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kwoh and McIntyre because linear insertion of the device during the medical procedure increases accuracy of the procedure in cases where the insertion site is not visible to the technician (McIntyre: Column 1, Lines 58 - Column 2, Lines 11).

7. In re claims 2 and 11, Kwoh discloses that the imaging device is a CT scanner, an MRI scanner, a CCT scanner, a fluoroscope, a SPECT scanner, a PET scanner, or a combination of the foregoing (i.e. for specific use in CT, MRI, ultrasound or PET imaging; see column 2, lines 61-68).

8. In re claims 3 and 12, Kwoh discloses that the medical device is an ablation probe or a biopsy needle (i.e. using the system for a needle biopsy surgery; see column 9, lines 6-12).

9. In re claims 4 and 13, Kwoh discloses that the means for selecting the virtual trajectory includes means for selecting a virtual target point in the image of the patient by identifying a first coordinate in the image of the patient, and means for identifying a virtual path extending from the selected virtual target point and out from the body of the

Art Unit: 3768

patient (i.e. utilizing stereotactic software for use with a CT scanner and interfacing with a robotic arm for surgeon interaction; see column 6, line 5-23).

10. In re claims 5 and 14, Kwoh discloses that the robotic means is adapted to move the guide apparatus into a position whereat the medical device is in an orientation suitable for motion relative to the patient along the selected linear path coincident with the virtual path extending from the virtual target point and out from the body of the patient (i.e. a system that moves linearly in line with a predetermined surgical path; see column 5, line 23 to column 6, line 23).

11. In re claims 6 and 15, McIntire teaches a remote tissue biopsy apparatus which includes a linear slide mechanism that inserts and slides a biopsy needle along a linear trajectory in response to a manual force applied by a human operator at a knob (Column 8, Lines 53-65, Column 10, Lines 23-40 and Figures 1 and 2).

12. In re claims 7 and 16, Kwoh discloses that the position feedback device provided on the connector portion of the guide apparatus for providing a feedback signal indicating a position of the guide apparatus relative to the patient (i.e. encoders present that provide position and velocity feedback; see column 4, lines 1-6) and means for displaying an image of the medical device as it is physically moved relative to the patient based upon feedback signal, together with the image of the patient and the virtual path (i.e. the N-shaped locators that provide spatial position references that show up in cross-sectional images obtained by operating the CT scanner; see column 6, lines 24-40).

Art Unit: 3768

13. In re claims 8 and 17, Kwoh discloses that the holding area is formed of an x-ray transmissive material (i.e. the N-shaped locators that provide spatial position references that show up in cross-sectional images obtained by operating the CT scanner; see column 6, lines 24-40).

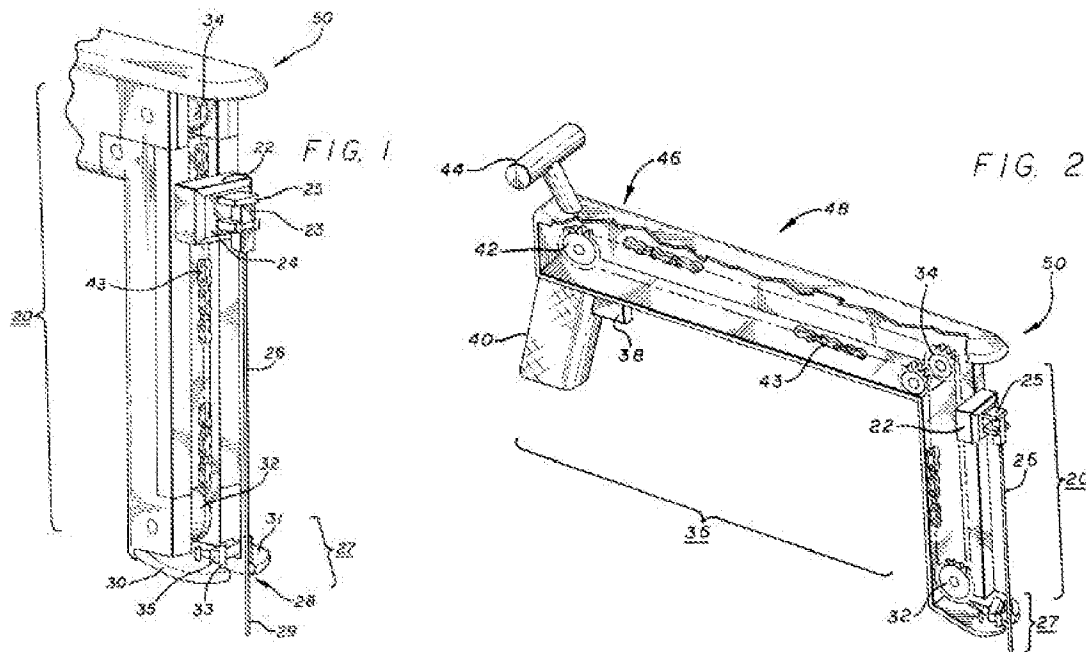
14. Claims 9, 18 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Kwoh et al, US Patent Number 5,078,140 in view of McIntyre, IV, US Patent Number 6,468,226 B1 as applied to claims 1-8, 10-17 and 19 above, and further in view of Johnson, US Patent Number 3,893,813.

15. Regarding claims 9, 18 and 20, Kwoh and McIntyre teach an imaging device and surgical method and apparatus as referenced above. Kwoh and McIntyre do not disclose that the holding area includes a set of tweezers-like arm portions adapted to grip the medical device in a V-shaped groove formed by the arm portions. Johnson teaches using a clamp with tweezers-like arm portions for use with chemical equipment in a laboratory setting, such as with pipettes and other precision instruments (see from column 1, line 64 to column 2, line 33 and Figures 1-3 and 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system, method or apparatus of Kwoh and McIntyre with the feature of a set of tweezers-like arm portions of the medical device holding mechanism as taught by Johnson as Kwoh and McIntyre and Johnson are directed to the system, method or apparatus for inserting a medical device into a patient, so as to give a sure way for mounting medical devices to the surgical system while still preserving the accuracy of the device and the sturdiness of the mount.

***Response to Arguments***

Applicant's arguments filed 7/21/11 have been fully considered but they are not persuasive.

16. Regarding applicant's argument that "McIntyre does not disclose such a linear slide mechanism. Even in the broadest reading of the McIntyre disclosure, including the passage at col. 10, lines 34-41, at most McIntyre describes internal linkages within the "guide apparatus" 48/50 to move a medical device along a linear path using manual force. McIntyre clearly does not disclose a linear slider mechanism in the connector portion to restrict movement along a linear path, as recited in the claims. Neither does Kwoh, as recognized in the Office Action": As recited in the office action, McIntyre clearly teaches a remote tissue biopsy apparatus that inserts and slides a biopsy needle along a linear trajectory in response to a manual force applied by a human operator at a knob (Column 8, Lines 53-65, Column 10, Lines 23-40 and Figures 1 and 2). Figures 1 and 2 have been reproduced below:



17. McIntyre specifically states that: "As further illustrated in FIG. 1, the exemplary embodiment permits reciprocating driving conveyor 22 which linearly travels along the vertical axis of tissue harvesting and collection head 20." (Column 8, Lines 53-58), as well as "Additionally, handle member 40 is provided for accurate and precise positioning and control of remotely controllable tissue harvesting and collection head 20 and tissue collection cannula 26. Further, remote control of the movement of reciprocating driving conveyor 22 is provided by a user input interface, here an actuating trigger 38, which operatively contacts and actuates the movement of a drive chain 43, over gears 34 and 32, for example, moving reciprocating driving conveyor 22 a precise, controllable distance under precise, controllable, manually applied pressure to actuating trigger 38. Remote control of the movement of remotely controllable tissue harvesting and collection head 20 and tissue collection cannula 26 can be alternatively be provided by other user input interfaces such as push pads, levers and other devices as known in the

Art Unit: 3768

art” (Column 9, Lines 50-64). One of ordinary skill in the art would recognize that the device of McIntyre would clearly fit within the scope of applicant’s claimed “linear slider mechanism”.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICHOLAS EVOY whose telephone number is (571)270-1388. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3768

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NICHOLAS L. EVOY/  
Examiner, Art Unit 3768

/LONG V. LE/  
Supervisory Patent Examiner, Art Unit 3768